



# Volunteer Lake Assessment Program Individual Lake Reports

## CHESTNUT POND, EPSOM, NH

### MORPHOMETRIC DATA

Watershed Area (Ac.):	154	Max. Depth (m):	7	Flushing Rate (yr <sup>-1</sup> )	0.8
Surface Area (Ac.):	30	Mean Depth (m):	3.4	P Retention Coef:	0.76
Shore Length (m):	1,600	Volume (m <sup>3</sup> ):	420,000	Elevation (ft):	737

### TROPHIC CLASSIFICATION

Year	Trophic class
1988	OLIGOTROPHIC
2006	MESOTROPHIC

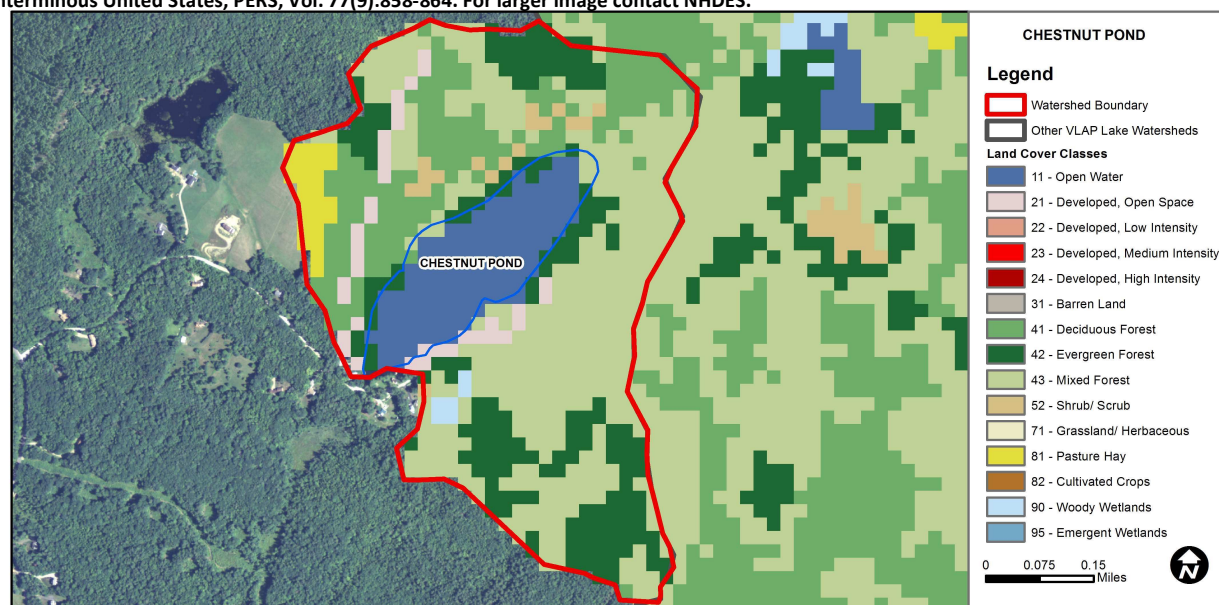
### KNOWN EXOTIC SPECIES


The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

### WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	12.8	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	4.14	Deciduous Forest	16.92	Pasture Hay	2.88
Developed-Low Intensity	0	Evergreen Forest	20.72	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	40.28	Woody Wetlands	0.69
Developed-High Intensity	0	Shrub-Scrub	1.96	Emergent Wetlands	0



# VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

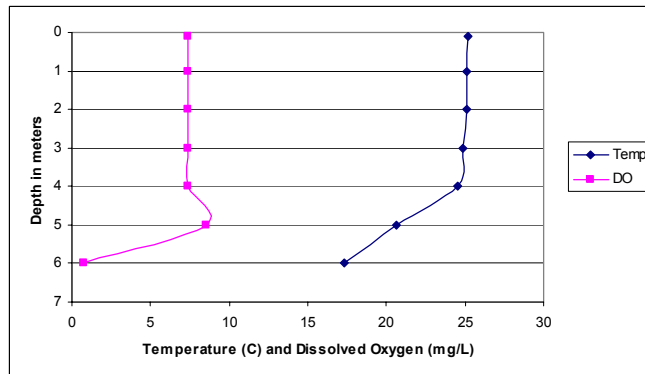
## CHESTNUT POND, EPSOM, NH

### 2012 DATA SUMMARY

#### OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels increased slightly as the summer progressed, but were at healthy levels. Historical trend analysis indicates a relatively stable chlorophyll level since monitoring began.
- ♣ **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were low.
- ♣ **E. COLI:** E. coli levels were well below the state standards for public beaches and surface waters.
- ♣ **TOTAL PHOSPHORUS:** Deep spot and tributary phosphorus levels were relatively low. Historical trend analysis indicates a relatively stable epilimnetic (upper water layer) phosphorus level since monitoring began.
- ♣ **TRANSPARENCY:** Pond transparency was good and has improved slightly in the past few years likely due to a slight decrease in algal growth. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- ♣ **TURBIDITY:** Deep spot and tributary turbidity were relatively low in 2012.
- ♣ **pH:** pH levels slightly were lower than desirable and approaching a critical level.
- ♣ **RECOMMENDED ACTIONS:** Maintain current monitoring program to better assess water quality trends. Conduct storm event sampling to identify potential stormwater impacts. Keep up the great work!

#### Dissolved Oxygen & Temperature Profile



Station Name	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m	ntu	
							NVS		
Barbs Dock					10				
East Side Inlet	4.5		3	33.3		8		0.63	6.69
Deep Epilimnion	4.77	3.46	3	35.4		10	4.78	0.99	6.61
Deep Hypolimnion				35.2		12		1.05	6.47
Inlet				33.3		9		0.75	6.7
Outlet				33.3	20	10		0.79	6.81

**NH Median Values:** Median values for specific parameters generated from historic lake monitoring data.

**Alkalinity:** 4.9 mg/L  
**Chlorophyll-a:** 4.58 mg/m<sup>3</sup>  
**Conductivity:** 40.0 uS/cm  
**Chloride:** 4 mg/L  
**Total Phosphorus:** 12 ug/L  
**Transparency:** 3.2 m  
**pH:** 6.6

**NH Water Quality Standards:** Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

**Chloride:** < 230 mg/L (chronic)  
**E. coli:** > 88 cts/100 mL – public beach  
**E. coli:** > 406 cts/100 mL – surface waters  
**Turbidity:** > 10 NTU above natural level  
**pH:** 6.5-8.0 (unless naturally occurring)

#### HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Stable	Data not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Stable	Data not significantly increasing or decreasing.

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:  
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